

## ABSTRACT OF THE DISCLOSURE

5 An internal combustion engine has a variable valve actuation device for lifting  
an intake valve. The device is capable of changing the amount of opening of the  
intake valve. The device is configured to calculate a first estimated value  $G_{ao}$  of the  
amount of intake air from a parameter regarding the operation state of the engine at  
the time of opening the intake valve; calculate a second estimated value  $G_{ac}$  of the  
amount of intake air from a parameter regarding the operation state of the engine at  
the time of closing the intake valve; and calculate an actual amount of intake air  $G_a$   
10 based on the first estimated value and the second estimated value.

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